specifically on the Commission's tentative conclusions regarding depreciation, cost allocation between regulated and nonregulated services, and a process for determining rate of return.

A. The prescription of depreciation rates within a cost-of-service environment makes no sense under a price cap form of regulation.

In proposing rules to govern cost-of-service showings the NPRM tentatively concludes, "that the Commission should prescribe depreciation rates for cable plant and that those rates should be designed to accurately match the useful life of the plant."[65] This conclusion is valid only in the context of cost-of-service showings, and regulation of depreciation rates in such fashion makes absolutely no sense in a price cap environment. The Commission is better served by determining whether it will prescribe depreciation for price cap purposes, and apply such rules for purposes of determining depreciation in a cost-of-service context.

However, the Commission has not defined how it will regulate cable industry depreciation rates within its proposed price caps methodology. The Commission's on-going proceeding dealing with simplification of the LECs' existing depreciation prescription process[66] addresses this and other issues which are equally applicable to the cable industry depreciation rate process. In the Depreciation NPRM, the Commission recognizes there is emerging competition to LECs in the markets they serve, finds its "price cap regulatory plan . . . provide[s] the incentives that occur in a competitive market, . . ." and concludes that "[its] price cap plan encourages carrier efficiency without allowing them to pass depreciation expense changes onto

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[65] NPRM at paragraph 21.

[66] Simplification of the Depreciation Prescription Process, CC Docket No. 92-296, Notice of Proposed Rulemaking, 8 FCC Rcd 146 (1992) (Depreciation NPRM).

ratepayers. . . ." The tentative conclusion is reached that "[T]he scrutiny [of depreciation] necessary under rate of return/rate base regulation may be relaxed under price cap regulation."[67] To the extent the Commission bases its cable rate regulation on price caps, it logically follows that its depreciation rate prescription process for cable should not be at the same level of scrutiny as it would be under rate of return/rate base regulation.

Congress has stated its policy is to ensure continued expansion of capacity and programs where economically justified.[68] The Commission found that price caps for LECs met a similar goal "to encourage the development of a competitive, innovative, and excellent American communications system."[69] Both the cable and LEC industries are faced with similar imperatives: network modernization that must continue indefinitely, investment programs undertaken in increasingly more competitive markets, and a regulatory environment that can no longer guarantee capital recovery. This makes necessary a reasonable opportunity for the two industries to recover current investment while balancing new technology investment and pricing decisions commensurate with market competitors.

One option, the price cap carrier option, proposed by the Commission in the Depreciation NPRM represents process reform that results in depreciation rate

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[67] *Id.*

[68] 1992 Cable Act Section 2(b)(3).

[69] Price Caps Order, 5 FCC Rcd at 6827.

regulation appropriate to a price caps environment.[70] Price caps not only changed the way LEC prices are regulated but also dramatically affected the significance of the depreciation prescription process.[71] The Commission has held that cost changes due to changes in depreciation rates are endogenous[72] and GTE agrees that such treatment is appropriate under price caps if the regulated entity can "proceed with implementing its investment decisions and appropriate charges without hindrance. . . ."[73] Reform of the depreciation process is essential to match the theoretical model under which cable operators and LECs can fairly be held responsible for their investment and depreciation decisions.

A depreciation prescription process based on cost-of-service regulation makes no sense in a price caps environment. Price caps regulation of both cable operators and LECs requires a prescription process different from cost-of-service. However, the convergence of the industries requires rejection of asymmetric regulation of the cable and LEC depreciation prescription process. Adoption of the price cap carrier option for both is consistent with price caps regulation and will ultimately benefit consumers and investors by providing incentives for investment consistent with a competitive market.

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70 Under this approach, the cable service providers would notify the Commission of the depreciation rates that they intended to apply during the coming year. The Commission could then issue a request for comments, consider any comments received, and approve, or modify, the depreciation rates proposed by the cable service providers. This approach would allow for consistent treatment of all concerns regulated by the Commission, would avoid the expenditure of considerable staff resources by the Commission that detailed regulation of depreciation rates and parameters would entail, would allow the companies appropriate flexibility to react to changing market or technological conditions, and would not have an adverse effect on customer rates.

71 GTE Comments at 5-6, Depreciation NPRM.

72 Price Caps Order, 5 FCC Rcd at 6809.

73 GTE Comments at 25, CC Docket No. 87-313, June 19, 1989.

B. Cost allocation should be maintained at the highest level of aggregation possible and affiliate transactions should generally follow Part 64.

The Commission has requested further comment on cost allocation requirements it had established in the *Rate Regulation Order* and also asked for comment on a number of additional requirements.[74] Specifically, the Commission requires cable operators to: (1) aggregate expenses and revenues at either the franchise, system, regional, or company level in accord with the operator's practice as of April 3, 1993; (2) allocate costs aggregated at a higher level to the franchise level proportional to number of franchise subscribers, while allocating between tiers on the basis of number of channels in each tier; (3) allocate common costs using procedures set out in Appendix A of the *Rate Regulation Order* NPRM; and (4) exclude unrelated expenses and revenues from regulated cable service.[75] The Commission also seeks comment on whether it should adopt cost allocation requirements to "govern allocation of costs between regulated cable service and unrelated activities. . ."[76] and generally if costs must be allocated at the franchise level, MSO level, or somewhere in between.[77]

GTE continues to recommend that costs be allocated between regulated and nonregulated operations under rules consistent with those in effect for LECs.[78] However, not all portions of the rules should be adopted. The asymmetrical treatment of property transactions according to the direction of the transfer should be rectified.

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74 NPRM at paragraphs 59-65.

75 *Id.* at paragraph 59.

76 *Id.*

77 *Id.* at paragraphs 63-65

78 GTE Reply Comments at 16, MM Docket No. 92-266 (Feb. 11, 1993).

Using the higher rate of market or book value when the asset is transferred to an unregulated affiliate does not balance the needs of stockholders with those of ratepayers.

Additionally, GTE disagrees with the Commission's definition of an affiliated entity as 5 percent or greater ownership interest for the purpose of determining a transaction with a nonregulated entity. The Accounting Principles Board ("APB") requires consolidation of an affiliate at 50 percent or greater ownership, or 20 percent or greater of ownership if significant influence over the entity can be established from ownership. Any entities with less than 20 percent ownership would not be considered an affiliate.[79] The 5 percent requirement for cable operators represents an administrative burden, lacking the benefit of any material transactions included as affiliates. GTE recommends that the definition of an affiliated entity, whether for cable operators or LECs, be established consistent with APB standards.

The Commission has requested comment on the level of aggregation required to permit regulatory authorities to judge the reasonableness of the rates in both tiers. Overall, with respect to cost-of-service regulation, GTE strongly recommends simplification to the maximum extent possible. Consequently, the Commission rules should allocate costs at the highest level possible. GTE recognizes, however, that the two-tiered regulatory scheme set by the 1992 Cable Act may require cost allocation at the franchise level to permit these regulatory authorities to assure the reasonableness of rates within their jurisdiction.

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[79] APB Opinion No. 18, paragraphs 3(c), 17.

C. The rate of return process should find a unitary return for the cable industry.

Adoption of the competitive price cap recommended by Dr. Schankerman reduces the importance of rate of return other than as a trigger mechanism once a cable operator sets rates using the benchmark or meets the high burden of a cost-of-service showing. However, it remains essential that the Commission set an appropriate rate of return to satisfy its statutory and constitutional duties as set out in *Duquesne, Hope,* and *Bluefield.* The tentative methodology suggested in the NPRM meets these requirements.

Prescribing a rate of return has been upheld as well within the Commission's powers,[80] and, since 1985, the Commission has established LEC rate of return on a unitary basis.[81] The NPRM at paragraph 46 solicits comments on whether a unitary rate of return should be established or whether rate of return should be established for groups or types of cable operators. GTE submits that a single unitary rate of return for use in the event of a cable operator meeting the test suggested by Dr. Schankerman is appropriate.[82]

The Commission is establishing a framework for rate regulation that uses traditional cost-of-service ratemaking as a safeguard, not the principal tool in assuring reasonable rates. That tool, long term, is the price caps mechanism. Rate of return is

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[80] *Nader v. FCC,* 520 F.2d 182, 204 (D.C.Cir. 1975).

[81] Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers, CC Docket No. 84-800, 59 Rad. Reg.(P&F) 2d 651 (1985) ("Docket 84-800 Order"), *aff'd on recon.,* 60 Rad. Reg.(P&F) 2d 1561 (1986). As the Commission explained, "[I]t is within the Commission's discretion to adopt a unified grouping scheme . . . when we have provided . . . the opportunity to seek special relief by requesting exclusion from the group and individual treatment." *Id.* 60 Rad. Reg.(P&F) 2d at 1568.

[82] Attachment at 5.

necessary only to assure that the framework meets the constitutional requirements. A unitary return is sufficient.

Even with its use as a backstop, rate of return prescription does require that the Commission be prepared to consider the necessity for a waiver from use of a unitary determination. The NPRM only suggests the availability of such a remedy. GTE suggests the Commission adopt the approach first set out in its *Docket 84-800 Order*, and provide such a waiver. It should be strictly limited in its application, however.

The Commission tentatively concludes that the Standard & Poors 400 Industrials ("S&P 400") can constitute a surrogate for the risks experienced by investors in regulated cable service, but seeks comment on whether the regulated telephone companies should be considered as a surrogate group.[83] GTE submits that the Commission should find that the risk of the regulated cable operators and the LECs are similar, and use the S&P 400, concentrating on those companies with returns on equity in the upper quartile.

IV. Conclusion

The Commission has the authority under the statutory mandate to devise a scheme of regulation which considers the increasingly obvious convergence of the LEC and cable industries. The regulatory scheme proposed by GTE focuses primarily on the benchmark/price caps and places lesser emphasis on the cost-of-service as a backstop mechanism. However, GTE proposes to retain a cost-of-service backstop to comport with the Commission's constitutional mandate.

With regard to price caps for cable operators, GTE proposes a new competitive price cap formula which embodies the Congressional directive to rely on the

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[83] NPRM at paragraph 50.

competitive market standard to the maximum extent feasible. This formula eliminates the need to determine a productivity offset for the cable industry. However, if the Commission retains the provisional price cap, the x-factor should be set equal to the LEC x-factor, which is currently 3.3 percent.

Finally, GTE urges the Commission to rely on the benchmark/price cap model, using depreciation prescribed using the price cap carrier option, and providing for allocation of cost between regulated and nonregulated transactions. A unitary rate of return should be set with the S&P 400 as the surrogate for cost of equity. Those companies with returns on equity in the upper quartile should be selected for use.

Respectfully submitted,

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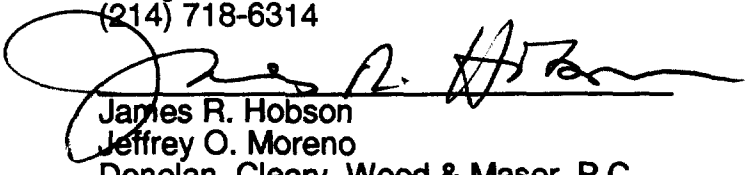

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Benchmarks and Yardsticks for Cable Regulation

Statement of Dr. Mark Schankerman
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In MM Docket No. 92-266, the Federal Communications Commission provisionally adopted a framework to regulate prices of noncompetitive cable systems in accordance with the mandate in the Cable Television Consumer Protection and Competition Act of 1992 ("Cable Act"). The plan contains four key elements: (i) a benchmark procedure to set initial price levels, (ii) a price cap mechanism to adjust prices over time, (iii) identification of "external costs" eligible for automatic recovery, and (iv) procedures for redress by cable operators under cost of service guidelines.[1] The benchmark procedure and price cap mechanism are the centerpieces of the regulatory framework. In response to issues raised in the Notice of Proposed Rulemaking, I focus in this statement on the design of the price cap mechanism, but also comment on other elements of the plan as they relate to price cap design.

Section 1 briefly reviews the economic and regulatory objectives of price cap regulation for the cable industry, and shows how these objectives shape the appropriate design of the price cap. Section 2 develops the economic foundations for price cap design and summarizes three alternative versions of price caps derived directly from these principles.[2] One version of these price caps has the form which

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1 Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992 - Rate Regulation, MM Docket No. 92-266, Report and Order and Further Notice of Proposed Rulemaking ["Order"], FCC 93-177 (released May 3, 1993) at paras. 222, 223, 241 and 258.

2 The technical derivation of these price cap mechanisms is provided in the attached appendix.

the Commission provisionally adopted for the cable industry in MM Docket 92-266 ("provisional price cap"). However, after a review of the limitations and information required to implement each price cap, I recommend a new and much simpler version based directly on the behavior of prices for competitive cable systems ("proposed price cap"). In Section 3, I discuss potential criticisms of the proposed price cap. Section 4 considers how to set the productivity offset (x-factor) for the provisional price cap, in case that formulation is retained by the Commission.

Section 1. Objectives of Cable Price Cap Regulation

The central objectives in designing regulation are to maintain prices for monopoly cable systems at reasonably competitive levels, to minimize the administrative burden and cost of the regulatory process, and to provide the regulated cable operators with economic incentives to operate efficiently and promote productivity growth.

To achieve these objectives, two key principles must govern the price cap design. First, the price cap should compensate the company for the real (inflation-adjusted) costs of providing services. Any price cap that systematically fails to do so would ensure the insolvency of the company. This *compensation principle* implies that regulated cable rates should reflect both the prices the company pays for inputs and any cost savings arising from economies of scale and scope, new technology, and other sources of efficiency improvements.

The compensation principle requires that output prices track unit cost of production. The unit cost varies directly with input prices and inversely with the level of Total Factor Productivity (TFP).[3] Hence, the rate of change in the cable *output price* should reflect rates of change of *input prices* and TFP. It is essential that the productivity adjustment factor for the price cap be based on TFP. All measures of partial productivity (e.g., labor productivity) are inappropriate because they do not reflect changes in the unit cost of production which depend on the utilization of all inputs. If a partial productivity index were used in place of the proper TFP index, the price cap would violate the compensation principle.

The second principle, the *incentive principle*, is that the price cap must provide monopoly cable operators with economic incentives to operate efficiently and undertake cost-reducing investments. The compensation principle requires that the company's own input prices and TFP growth should govern the rate at which its output prices change. In that form, however, the price cap would essentially function as a "cost plus" formula and would provide no incentives to company management to restrain costs or improve productivity performance. In order to generate incentives, the price cap must incorporate some kind of external yardstick both for input price

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[3] The level of TFP is a measure of overall technical efficiency. It is defined as the amount of composite output per unit of composite input, using appropriate aggregate (Tornquist) indices of inputs and outputs. The rate of growth of TFP is the difference between the rates of growth of composite output and input, and reflects two main factors: economies of scale and scope and expansion of the underlying production frontier ("technical change"). For given levels of input prices, growth in TFP is equivalent to reductions in the unit cost of production. This equalization holds both for TFP growth due to technical change (shifts in the cost curve) and to economies of scale (expansion along a given, declining unit cost curve). This is why the price cap must depend on the overall rate of growth in TFP, regardless of its source.

changes and TFP growth. The key requirement for a valid yardstick is that it must be unaffected by the operating and investment decisions of the regulated companies. Under this condition, if a regulated cable operator is able to generate TFP growth in excess of the yardstick rate, or keep input price increases below the yardstick rate, the output price growth allowed by the price cap will exceed the level which just compensates the company for changes in its unit cost of production. This implies that the company can increase its rate of return by successfully exceeding the yardsticks built into the price cap. It is precisely this additional reward that incents efficient behavior. The mechanism also imposes a symmetric penalty for inefficient operation.

It is important to emphasize that a price cap mechanism with appropriate yardsticks for input price and TFP growth obviates the need for any direct regulatory supervision or management of operational and capital budgeting decisions of cable operators. This is the major advantage of price cap regulation, compared to the traditional cost of service approach, and it was the primary reason the Commission adopted price caps for cable.[4] It is very important that the Commission preserve this advantage by strictly limiting the use of cost of service appeals. The Commission provides for cost of service reviews as a *safeguard* to ensure that the primary rate setting mechanisms (the benchmark and price cap) do not subject individual cable operators to such low earnings over a prolonged period that their ability to raise financial capital and provide service are seriously impaired.[5] However, the

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[4] MM 92-266 Order at para. 228.

[5] Id. at paras. 262 and 401.

Commission must not allow this safeguard to supersede the price cap mechanism or become a convenient outlet for poorly managed cable systems.

To preserve efficiency incentives and avoid regulatory micromanagement, I recommend that the Commission adopt an "earnings floor" adjustment mechanism similar to but different in key respects from the adjustment it employs for price cap regulation of Local Exchange Carriers ("LECs").[6] This earnings floor should be designed to provide a cable operator the opportunity for a cost of service based price adjustment in the case where the operator can demonstrate prolonged substandard earnings.[7] Under the mechanism the opportunity to seek such relief would be triggered when a cable system's rate of return falls below a specified level for a period of time (e.g., below the trigger level for more than two or three consecutive years).[8] In order to keep regulation manageable and preserve incentives, the Commission needs to incorporate two features into this mechanism. First, the Commission should set this trigger rate of return at the low end of the range of reasonableness for the cost of

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6 Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order, 5 FCC Rcd 6786, 6802, 6804, CC Docket No. 87-313 (1990) ("Price Caps Order").

7 Opportunity for cost-of-service showing may, as a legal matter, be required to set the *initial* rate, but once the price cap mechanism begins to function for price *adjustment*, the use of cost-of-service demonstrations should be limited as discussed. To ensure that this relief does not permanently raise the price level, an equivalent reduction in the price cap must be made in a subsequent year. This is necessary so that the company does not permanently benefit from the initial inefficiency which triggered the adjustment.

8 The California incentive regulation plan adopted in 1989 (CPUC Decision 89-10-31) incorporates provisions for cost of service review in extreme cases. Given the number of regulated cable systems, it is very important that use of such provisions be highly restricted.

capital and for administrative tractability, the Commission should set a single (uniform) trigger for all cable operators.[9] Second, the cable operator must bear the burden of proof in the cost of service proceedings and the appropriate reasonableness and prudency tests must be applied. This is the policy the Commission adopted in the LEC price cap proceeding.[10] I believe that this mechanism will adequately safeguard cable operators under price cap regulation.

The use of yardsticks is central to price cap regulation. It is precisely the decoupling of monopoly cable rates from monopoly cable costs that generates incentives for efficient behavior. The resulting cost savings are referred to as technical efficiency gains. As always in economics, however, there is some "price" to be paid for this gain. Whenever output prices deviate from (marginal) costs there is an allocative distortion because consumers are faced with price signals that do not fully reflect the resource cost of supplying the marginal unit. Price cap regulation essentially represents a tradeoff between technical efficiency gains and allocative efficiency losses.

The key to a well-designed price cap is to make this tradeoff as favorable as possible. For cable regulation this requires two elements: (i) a careful benchmark procedure to set initial prices for monopoly systems reasonably close to their unit costs in order to minimize allocative distortion, and (ii) selection of a suitable yardstick

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[9] In principle the Commission could develop a set of triggers, differentiated according to easily observed characteristics of cable systems that affect their cost of capital (e.g. debt-equity ratios). I think this alternative will be difficult to develop and implement in practice, and may itself induce cable operators to adjust those characteristics strategically.

[10] Price Caps Order, 5 FCC Rcd at 6804, 6806-6807.

for input prices and TFP to generate maximum (achievable) technical efficiency gains.[11] In theory the most accurate way to initialize prices would be to conduct a cost of service hearing for each regulated cable system. In practice this is impossible because the number of cable systems is too large and there are no common accounting standards in place.[12] The benchmark procedure proposed by the Commission can serve as a practical alternative, but in my view the econometric analysis needs to incorporate a more complete list of *cost-determining* characteristics of cable systems if it is to provide a meaningful starting point for the price cap. These should include key demographic features of the franchise area (e.g., population density) and technological characteristics of the cable system. A full analysis of this issue is beyond the scope of this statement, but it is important that the benchmark model be strengthened. The reason is that there is a basic tradeoff in designing this regulatory framework between the quality and completeness of the benchmark model on the one hand, and the reliance on cost of service appeals on the other. If the benchmark procedure is crude, cable operators will be far more likely to apply for relief under cost of service procedures which would destroy both efficiency incentives and administrative simplicity. I have proposed that the Commission adopt an earnings floor mechanism which would severely limit the use of cost of service appeals. To be effective, this proposal requires improvement in the benchmark model to set initial prices.

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[11] If the yardstick is not stringent enough, technical efficiency incentives will be weakened and any initial allocative inefficiency (deviations between prices and marginal cost) will grow over time.

[12] *But see* note 7, *supra*.

As a practical matter, the Commission could proceed with its provisional benchmark model to initialize rates for September 1993, while concurrently pursuing improvements in the empirical specification of the model. The improved version could then be used to reset initial rates at some specified future date (say September 1994).[13]

On the selection of appropriate yardsticks, the price cap which I propose is based on competitive, unregulated cable systems as the yardstick both for input prices and TFP. By contrast, the price cap provisionally adopted by the Commission uses more aggregate (economy-wide) targets which are less directly comparable to regulated cable systems. The next section and the appendix discuss and compare these two approaches more fully.

Section 2. Price Cap Design

The basic formulation of the price cap that incorporates incentives for (technical) efficiency can be written as

(1) $dp_m = dw_t - dTFP_t$

[13] To avoid inducing strategic responses to this procedure by cable operators, the revised benchmark model should be based on data ending in 1993. Adjustment of price levels for the lag between 1993 and the benchmark revision date could be made on the basis of the GNPPI for that year only.

where dp and dw represent the rates of change in composite (weighted average) output prices and input prices, and dTFP denotes the rate of growth in TFP.[14] The subscripts "m" and "t" denote the regulated monopoly system ("monopoly") and the selected yardstick ("target"), respectively. This equation sets the (maximum) output price growth of regulated cable systems equal to the difference between the rates of growth in input prices and TFP for the chosen yardstick. If the yardstick were the same as the regulated monopoly, this output price change would just compensate the monopoly for changes in its real cost of production (as required by the *compensation principle*). This would not provide incentives for technical efficiency. As discussed in Section 1, incentives are provided by using external yardsticks for input price and TFP growth in Equation (1). The choice of appropriate yardsticks to generate these incentives depends on the structure of the industry and the availability of information. Two alternative approaches are outlined here.

The first price cap specification is the one used by the Commission for Interexchange Carriers ("IXCs") and LECs, and provisionally adopted for cable. This specification is based on the assumption that composite input price growth at the economy-wide level (dw_a) is a reasonable yardstick for regulated cable systems. There is no publicly available, annual index of composite input prices at the aggregate

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[14] A complete derivation of the equations discussed is provided in the appendix.

level.[15] However, one can use the sum of output price inflation (dp_a) and TFP growth at the economy-wide level as an indirect measure of aggregate input price inflation.[16] This allows one to reformulate the basic price cap in the following way:

$$(2) \qquad dp_m = dp_a - x \qquad \text{where } x = dTFP_t - dTFP_a$$

In this formulation, output prices are allowed to change at the rate of aggregate output price inflation (e.g., the GNPPI) *minus* a productivity offset or "x-factor" that represents the *differential* between the yardstick and economy-wide rates of TFP growth. The reason that the x-factor is a differential is that the aggregate inflation term (dp_a) already reflects aggregate TFP growth.

Equation (2) is the form of price cap used by the Commission for IXCs and LECs, and provisionally adopted for cable. However, this formulation is not the best available approach to solving the "yardstick" problem for cable regulation. There are two reasons for this conclusion. First, there remains the difficult problem of setting a sensible value for the x-factor and adjusting it over time (see Section 4 for discussion). In the case of telephony regulation, this issue was somewhat less problematic because there was a substantial body of empirical evidence on TFP growth in that industry. Similar hard evidence is not yet available for the cable industry.

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[15] The composite index refers to the cost-share weighted average of component input price growth (see the appendix). Data are available at the economy wide level for selected input prices but not for a composite input price index.

[16] Specifically, one can write $dw_a = dp_a + dTFP_a$, where the subscript denotes the (aggregate) economy. Substituting for dw_t into Equation (1) yields the result in the text. See the appendix for details.

The second, and more important, reason is that there is a much better yardstick available for regulated cable systems than the economy-wide metric embodied in Equation (2). The cable industry consists of both monopoly systems and competitive systems providing essentially the same set of services. The most natural and appropriate approach is to use competitive cable systems as the yardsticks for input prices and TFP for regulated systems.[17] However, it is not even necessary to construct separate yardsticks for input prices and TFP. Instead, my recommendation is to base the price cap for monopoly cable systems directly on the *output prices for competitive systems.* Use of this output price yardstick obviates the need to have separate yardsticks for the growth in input prices and TFP because both factors are reflected in movements in competitive cable output prices.

Using this yardstick, the original price cap in Equation (1) becomes

$$(3) \qquad dp_m = dw_c - dTFP_c$$

where the subscript "c" denotes competitive cable systems. This equation simplifies even further because the right hand side is simply the rate of change in competitive cable prices, dp_c. Therefore, the entire price cap for regulated cable systems is reduced to using the change in the output price of competitive cable systems. That is,

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[17] This approach cannot be used for LECs at the present time because, while there is competition in selected telephony services, the industry does not yet contain full-service, competitive companies. The proposed approach may be applicable to LECs at some future date, especially as the telephony and cable industries converge.

(4) $dp_m = dp_c$

This is the price cap formulation which I recommend to the Commission. This proposed price cap is derived from the same economic principles as the other versions, but is far simpler and more direct. Namely, the price change for monopoly cable systems is limited by the price change in competitive cable areas.[18]

As indicated earlier, this formulation has two major advantages: (i) it is based on the most appropriate available yardstick, i.e., competitive cable systems, for regulated cable systems, and (ii) it eliminates the need to construct separate measures of input price and TFP growth for the (yardstick) competitive systems because their *output* price growth already reflects both factors.

The proposed price cap can be implemented easily. To construct the yardstick, I recommend that competitive systems be defined as all multichannel video providers meeting the criteria for "effective competition" specified in the Cable Act,[19] except low penetration systems. Low penetration systems should be excluded from the yardstick, because in my view, the evidence clearly shows that such areas are not characterized

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[18] If there were good reason to believe that the TFP growth potential for monopoly systems differs from competitive systems, the price cap could be modified to reflect this difference as follows: $dp_m = dp_c - [dTFP_m - dTFP_c]$. In this case, the Commission would again have to determine the appropriate productivity offset in brackets. There is no evidentiary basis or strong *a priori* reason to make this adjustment at this stage.

[19] When a cable system first shifts into the "effectively competitive" category, according to the criteria in the Cable Act, it may be reasonable to expect some transitional disequilibrium pricing behavior. Therefore, I suggest that such systems be included in the competitive yardstick calculation only after one or two years.

by effective competition.[20] The Commission should apply this proposed price cap to both basic and enhanced basic services to maintain "tier neutrality," as under the provisional price cap.[21] The only information the Commission needs to implement the price cap are the prices of *competitive* cable systems. These data could be gathered annually from all (or a random sample of) competitive cable operators without substantial regulatory burden.[22]

The proposed competitive price cap satisfies the central legislative directives in the Cable Act and has several important advantages over the price cap provisionally adopted by the Commission. First, the Cable Act expresses Congressional policy to rely on the marketplace to the maximum extent feasible to promote programming diversity (Sec.2, Para.(b)), and to use the competitive standard for determining rates for monopoly cable systems (Sec.3, Para.(b)). The proposed price cap formally embodies precisely that standard in the mechanism to regulate monopoly rates. Second, the proposed price cap is simple to implement and minimizes the administrative burdens on cable operators, local franchising authorities, and the

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20 Joint Comments of Bell Atlantic, GTE, and NYNEX, MM 92-266, Affidavit of Thomas Hazlett, June 17, 1993, pp. 11-12.

21 It is important to maintain tier-neutrality for two reasons. First, it prevents monopoly cable operators from circumventing regulation by recategorizing services. Second, tier-neutrality very substantially reduces the potential for cross-subsidization. Under a price cap, cable operators cannot raise prices to monopoly levels for some services to recoup losses from underpricing other services. There still remains some limited potential to use unregulated services for this purpose.

22 The Commission has statutory authority to compile and publish basic cable and other programming service rates for competitive and regulated monopoly systems (Cable Act, Sec.3, Para.(k)).

Commission, as required by the Cable Act (Sec.3, Para.(b)).[23] Third, the proposed price cap eliminates the need to determine an appropriate productivity offset for the cable industry relative to the economy at large, the "x-factor."[24] Finally, there is no need for any procedure to adjust a productivity offset over time because competitive output prices automatically reflect TFP for the (yardstick) competitive cable systems.

Section 3. Potential Criticisms of the Proposed Price Cap

This section addresses potential criticisms of the proposed price cap based on output prices for competitive cable systems. The first criticism is that the average cost per channel for monopoly systems may systematically differ from competitive systems, and hence competitive cable rates are not a useful yardstick. Such cost differences may arise from systematic variations in input prices, embedded technology and demographic characteristics. To address this criticism, one must carefully distinguish between the *initial price level* (the benchmark) and the *price cap for adjusting prices.* The benchmark procedure is used to set initial price levels for monopoly cable systems. If there are unique features of monopoly systems that affect their costs, they should be incorporated in the determination of the benchmark. The econometric model used by the Commission to determine provisional benchmarks controls for

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[23] To ensure that this simplification of the regulatory process is realized, it is also important that appropriate restrictions on cost of service relief be adopted. (See the discussion of the earnings floor mechanism in Section 1.)

[24] This need arises with the proposed price cap only if monopoly and competitive cable systems have systematically different TFP growth rates. See note 17.

measures of scale but not other potentially relevant characteristics.[25] As indicated earlier, I do think it is advisable for the Commission to improve its benchmark. To accomplish this, the Commission should require both regulated and competitive cable companies to submit information that can be used to incorporate more franchise and system characteristics in the benchmark methodology. In any event, putative differences in the *level* of average cost relate solely to the benchmark procedure and have nothing to do with the design of the price cap which adjusts prices over time. Competitive system prices remain the best yardstick for the price cap.

A second criticism is that monopoly cable systems have less potential for TFP growth than competitive systems, so that the proposed price cap will penalize regulated monopoly operators. There are three points to be made in response. First, since both monopoly and competitive systems draw from the same pool of technology and produce (or can produce) similar service offerings, the validity of this claim is dubious. Second, it should be emphasized that *any* price cap that provides incentives

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[25] Specifically, the model uses three variables: the number of subscribers, channels, and satellite sources for programming. For discussion on this issue see Attachment to Viacom International Inc., Petition for Reconsideration and Clarification, June 21, 1993, James Dertouzos and Steven Wildman, "Regulatory Benchmarks for Cable Rates: A Review of the FCC Methodology" (June 1993). For empirical studies of the determinants of cable prices more generally see Stanford Levin and John Meisel, "Cable Television and Competition - Theory, Evidence and Policy," Telecommunications Policy, December 1991, pp. 519-528; Robert Rubinovitz, "Market Power and Price Increases for Basic Cable Services Since Deregulation," Rand Jo. of Economics, Vol. 24, No. 1, Spring '93, pp. 1-18; Willis Emmons and Robin Prager, "The Effects of Market Structure and Ownership on Prices and Service Offerings of U.S. Cable Television Industry," paper presented at Western Economics Association Conference, June 22, 1993; and John Mayo and Yasugi Orsuka, "Demand, Pricing, and Regulations: Evidence from the Cable TV Industry," Rand Jo. of Economics, Vol. 22, No. 3, Autumn '91, pp. 396-410.

for efficient operation must decouple the company's prices from its costs by utilizing an external yardstick for input prices and TFP. The real issue in designing the price cap is to select the best available yardstick and to incorporate adequate safeguards to accommodate special circumstances without undermining the efficiency incentives. The price cap provisionally adopted by the Commission is based on an economy-wide yardstick for input price growth. In my view, there is no doubt that competitive cable systems are a much better yardstick for regulated monopoly systems than this economy-wide measure. The third point is the issue of safeguards. I have recommended that the Commission adopt an earnings floor mechanism that would allow full cost of service review for cases of protracted substandard earnings (see Section 1). I believe this safeguard will adequately protect regulated cable operators without damaging the important incentives provided by the basic price cap.

A third criticism to the proposed price cap is that, contrary to the objectives embodied in the Cable Act, it will not promote investment in infrastructure and programming diversity. This criticism lacks both theoretical and empirical foundation.[26] Equally important, it is inconsistent with the clear preference for competition expressed by Congress in the Cable Act. By exempting "effectively competitive" systems from regulation, Congress decided in favor of a competitive standard to judge the economic performance of cable systems, including prices, programming and private infrastructure investment. The proposed price cap formally embodies this standard in the mechanism to regulate monopoly rates.

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[26] Researchers who have empirically studied the determinants of program quality have reached mixed conclusions about the effects of deregulation and competition. See, e.g., Emmons and Prager, and Rabinovitz, id.

There is an important corollary to this point. If the proposed price cap were adopted, there would be no basis for the provisional decision by the Commission to treat programming costs (for Multiple System Operator ("MSO")-unaffiliated cable operators) as "external costs" and to allow automatic recovery through rates (MM Docket 92-266, para. 251). The Commission reached this conclusion on the basis of the finding in the record that programming costs increased at a rate exceeding the *overall rate of inflation*. The choice of yardstick underlying the price cap is key here. The Commission's provisional price cap is based on an aggregate output price index (GNPPI), so that special treatment of programming costs may have been warranted. However, output prices for competitive systems will already reflect programming costs for competitive cable systems and, similarly, the rate of change of output prices will capture changes in programming costs. Therefore, a price cap based on these competitive output prices obviates the need for special treatment of programming costs for regulated monopoly systems. This is an important advantage of the proposed price cap because programming costs are a large component (around 35%) of total cable operating expenses,[27] and therefore need to be subjected to the efficiency incentives provided by the price cap.[28]

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[27] Based on data for a sample of large MSOs in 1992, cable programming costs were about 38% of total operating expense for east coast systems and 34% for west coast systems. Estimates provided by GTE Laboratories, Inc.

[28] The same argument holds for investments in system improvement and expansion. These should not be treated as "external" under the proposed price cap. The Commission has ruled such costs ineligible for external treatment under the provisional price cap (Rate Regulation Order, MM Docket No. 92-266, para. 256, n.608).